In the Claims:

Please replace claim 12 with the following amended claim:

12 (Amended) The stent as recited in claim 9 where said stent is balloon expandable.

REMARKS

This Amendment is in response to the Office Action dated December 20, 2001. In the Amendment, claims 9-20 are rejected. Claims 9-20 are pending.

The paragraph headings below correspond to those of the Office Action.

SPECIFICATION

The abstract is objected to as being too concise. In response, Applicant has amended the abstract. Withdrawal of the objection is respectfully requested.

35 USC 112

Claims 9-20 are rejected under 35 USC 112 first paragraph. Specifically, the claim language " the first type of set of strut members having a shorter total circumferential length as compared to the total circumferential length of the second type of set of strut members" is said not to have original support. Applicant notes that support for the claim language is found in Fig. 4 of the application as originally filed. Fig. 4 shows a stent with the recited features. As discussed in MPEP section 2163 and as discussed in Vas-Cath, Inc. v. Mahurkar, 19 USPQ.2d, drawings alone may provide a written description of an invention as required by 35 USC 112. Support for the claim language is also found in the last paragraph on page 4 of the specification.

Withdrawal of the rejection is respectfully requested.

As to claim 12, the stent mounted on a balloon is said to be new matter. Claim 12 has been amended without prejudice or disclaimer to recite that the stent is balloon expandable. Support for the amendment is found on page 1 lines 22-24 and 28-29 of the specification as filed. Specifically, page 1 lines 22-24 of the specification states:

An example of the latter type is shown in U.S. Pat. No. 4,733,665 to Palmaz, which issued Mar. 29, 1988, and discloses a number of stent configurations for implantation with the aid of a catheter. The catheter includes an arrangement wherein a balloon inside the stent is inflated to expand the stent by plastically deforming it, after positioning it within a blood vessel.

Lines 28-29 state:

This invention is directed to stents of all these types when configured so as to be longitudinally flexible as described in detail hereinbelow.

Claims 9-20 are rejected under 35 USC 112 second paragraph. Specifically, the Office Action states that the language of the claim lacks clear antecedent basis from the specification and that it is not clear what element of the specification corresponds to the structure of element of the claims. Applicant submits herewith a marked-up copy of Fig. 4 with reference numerals indicating the locations of the elements of the claims.

Specifically, as shown in Appendix 1, the longer strut members at the ends of the stent are labeled 18A and the shorter strut members are labeled 18B. The longer strut members 18A form a second set of strut members 16A which extend about the circumference and the shorter strut members 18B form a first set of strut members 16B which extend about the circumference. The first type of set of strut members 16B has a shorter total circumferential length as compared to the total circumferential length of the second type of set of strut members 16A. Finally, the connectors are labeled with reference numeral 20.

35 USC 102

Re Moriuchi

Claims 9-20 are rejected under 35 USC 102(e) as being anticipated by Moriuchi (US 6,013,854). Figs. 5 and 6 of Moriuchi are relied upon in the rejection. The comments below do not constitute an admission that Moriuchi is prior art. Applicant reserves the right to swear behind Moriuchi at a later date.

The stent of claims 9-17 comprises a multiplicity of sets of strut members with each set of strut members forming a circumferentially extending **closed** structure. Adjacent sets of strut members are coupled each to the other by connectors. The stent has two types of circumferentially extending sets of strut members, namely a first type of set of strut members and a second type of set of strut members. The first type of set of strut members has a shorter total circumferential length as compared to the total circumferential length of the second type of set of

strut members.

Referring to Figs. 5 and 6 of Moriuchi, the Office Action states that "the first type or set of strut members as claimed are in the center section (103) of Moriuchi and the second type or set of strut members as claimed are in the proximal and distal sections (104) of Moriuchi.

Applicant is unable to find the recited two types or sets of struts, each of which forms a circumferentially extending closed structure where the first type of set of strut members has a shorter total circumferential length as compared to the total circumferential length of the second type of set of strut members. The stent of Figs. 5 and 6 of Moriuchi is helical (see, for example, col. 10, lines 63-64, col. 11, line 11 and col. 4, lines 46-47). It is described at col. 12, line 30 as being formed of two wires which are connected to one another. Each wire is formed into a zig-zag consisting of repeated "<" shapes, as stated in col. 12, lines 8-10. The helical extending wires of Moriuchi are not 'closed circumferential structures'.

Furthermore, even assuming for the sake of argument that the helical extending wires were considered to 'closed circumferential structures', there is no disclosure in Moriuchi that the structures at the ends of the stent of Figs. 5 and 6 have a longer total circumference than the structures in the middle of the stent. To the extent that leg 113 is considered to be longer in length than any of the other legs of the stent, the leg includes a connecting portion which connects to an adjacent wire – thus, leg 113 actually constitutes a strut and a connector. The claim language in question, however, does not include the length of the connectors when measuring the total circumferential length of the first and second sets of struts.

Finally, it is noted that the Moriuchi patent attributes to the increased flexibility of the ends sections of the stent relative to the middle portion of the stents to the smaller cross-section of the wires at the ends as compared with the cross-section of the wires at the middle of the stent. It is reasonable to presume that had the ">" shaped members of the Moriuchi stent been longer at the ends of the stent, this would have been identified as a factor causing increased flexibility in the ends of the Moriuchi stent.

Further as to claim, 10, there is no disclosure in Moriuchi of a stent having a first type of set of strut members which has a length in the longitudinal direction that is less than the length in the longitudinal direction of the second type of set of strut members.

Claims 18-20 are patentable over Moriuchi for the same reasons as claim 9.

Re Cardon

Claims 18 and 20 are rejected under 35 USC 102(b) as being anticipated by Cardon et. al. (EP 0541443). Cardon lacks the recited two types of circumferentially extending sets of strut members as recited in the instant claims. The middle portion of the Cardon stent is formed of a plurality of wires. Each wire extends the length of middle portion and partially about the circumference of the stent. None of the wires can be considered to be a 'strut' as understood by one of ordinary skill in the art. Moreover, none of the wires of the Cardon stent can be considered to form a 'closed circumferential structure' as recited in the instant claims. As such, the instant claims are patentable over Cardon.

FORMALITIES

If an extension of time is required to make this response timely and no separate petition is enclosed, Applicant hereby petitions for an extension of time sufficient to make the response timely. In the event that this response requires the payment of government fees and payment is not enclosed, please charge Deposit Account No. 22-0350.

CONCLUSION

In light of the above comments, the instant claims are seen to comply with 35 USC 112 and are seen to be patentable over the applied references. Applicant requests withdrawal of the rejections.

Respectfully submitted,
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12. Amended) The stent as recited in claim 9 where said stent is balloon expandable [radially expanded responsive to inflation of a balloon onto which balloon the stent is mounted]

Abstract:

In the Abstract, on page 7 of the specification, please replace the paragraph beginning on line 5 with the following paragraph:

[Segmented articulatable stent of open structure comprised of end-connected struts making up the segments with angular interconnects between segments.] An expandable stent comprises a multiplicity of sets of strut members. Each set of strut members forms a circumferentially extending closed structure with adjacent sets of strut members being coupled each to the other by connector. The stent has two types of circumferentially extending sets of strut members, a first type of set of strut members and a second type of set of strut members. The first type of set of strut members has a shorter total circumferential length as compared to the total circumferential length of the second type of set of strut members. When the stent is radially deployed to its nominal diameter, the first type of set of strut members has greater radial rigidity as compared to the second type of set of strut members.

US 09/599,674
Appendix to Amendment

Fig. 4